CLAIMS:

We claim:

1. An acoustic blanket, comprising:

a first carbon Teflon impregnated fiberglass cover material;

a second carbon Teflon impregnated fiberglass cover material heat-sealed to the first cover material around at least a portion of a perimeter of the first and second cover materials; and

at least one Polyimide foam panel disposed between the heat-sealed first and second cover materials.

2. The blanket of Claim 1 comprising:

a plurality of fastener assemblies to connect the acoustic blanket to a structure so as to define an air gap of pre-determined dimension between the acoustic blanket and the structure, wherein the pre-determined dimension of the air gap is controllable by the fastener assemblies.

3. The blanket of Claim 1 comprising:

at least one vent disposed in at least one of the first and second cover materials.

4. The blanket of Claim 3 wherein the at least one vent comprises:

one of a stainless steel vent screen and a Teflon vent screen heat-sealed into the at least one of the first and second cover materials.

5. The blanket of Claim 1 comprising:

a plurality of Polyimide foam panels disposed between the heat-sealed first and second cover materials.

6. The blanket of Claim 1 comprising:

at least one barrier ply layer disposed between the heat-sealed first and second cover materials.

7. The blanket of Claim 6 wherein the at least one barrier ply layer comprises:

one of a butyl rubber layer and a silicon rubber layer.

8. The blanket of Claim 6 wherein the at least one barrier ply layer comprises:

a carbon Teflon impregnated fiberglass layer.

9. The blanket of Claim 2 comprising:

a plurality of grommets disposed in the heat-sealed perimeter of the first and second cover materials.

10. The blanket of Claim 9 wherein the plurality of fastener assemblies comprise:

a plurality of standoffs mounted on the structure and collocated with the plurality of grommets; and

a plurality of members threadable into the plurality of standoffs to secure the acoustic blanket to the standoffs and position the blanket above the structure so as to define the pre-determined air gap between the acoustic blanket and the structure.

11. The system of Claim 1 wherein the acoustic blanket weight is in the range of one-quarter pound per square foot and one pound per square foot.

12. An acoustic blanket system, comprising:

a first cover material;

a second cover material connected to the first cover material;

at least one acoustic attenuating panel disposed between the first and second cover materials; and

a plurality of fastener assemblies to connect the acoustic blanket to a structure so as to define an air gap of pre-determined dimension between the acoustic blanket and the structure, wherein the fastener assemblies control the pre-determined dimension of the air gap.

13. The blanket of Claim 12 comprising:

at least one vent screen disposed in at least one of the first and second cover materials.

14. The blanket of Claim 13 wherein the at least one vent comprises:

one of a stainless steel vent screen and a Teflon vent screen heat-sealed in the at least one of the first and second cover materials.

15. The blanket of Claim 12 wherein the at least one acoustic attenuating panel comprises:

a Polyimide foam panel.

16. The blanket of Claim 12 comprising:

a plurality of acoustic attenuating panels disposed between the first and second cover materials.

17. The blanket of Claim 16 comprising:

at least one barrier ply layer disposed between the first and second cover materials.

18. The blanket of Claim 12 wherein the first and second cover materials comprise:

carbon Teflon impregnated fiberglass, and wherein the first and second cover materials are heat-sealed around at least a portion of a perimeter of the first and second cover materials and include a plurality of grommets disposed within the heat-sealed perimeter.

19. The blanket of Claim 18 wherein the plurality of fastener assemblies comprise:

a plurality of standoffs mounted on the structure and collocated with the plurality of grommets; and

a plurality of members threadable into the plurality of standoffs to secure the acoustic blanket to the standoffs so as to define the pre-determined air gap between the acoustic blanket and the structure.

20. An acoustic blanket system for space vehicles, comprising:

a structure defining at least a portion of a space vehicle;

at least one acoustic blanket connected to the structure comprising:

a first Teflon impregnated fiberglass cover material;

a second Teflon impregnated fiberglass cover material heat-sealed to the first cover material around at least a portion of the perimeter of the first and second cover material;

at least one Polyimide foam panel disposed between the heat-sealed first and second cover materials; and

a plurality of fastener assemblies to connect the acoustic blanket to the structure.

21. The system of Claim 20 wherein the plurality of fastener assemblies connect the acoustic blanket to the structure to define an air gap of pre-determined dimension between the acoustic blanket and the structure, wherein the fastener assemblies control the pre-determined dimension of the air gap.

22. The system of Claim 20 comprising:

at least one vent screen disposed in at least one of the first and second cover materials.

23. The blanket of Claim 22 wherein the at least one vent comprises:

one of a stainless steel vent screen and a Teflon vent screen heat-sealed in the at least one of the first and second cover materials.

24. The blanket of Claim 20 comprising:

a plurality of Polyimide panels disposed between the heat-sealed first and second cover materials.

25. The blanket of Claim 20 comprising:

at least one barrier ply layer comprising:

one of a butyl rubber layer, a carbon Teflon impregnated fiberglass layer and a silicon rubber layer.

26. The blanket of Claim 20 comprising:

a plurality of grommets disposed in the heat-sealed perimeter of the first and second cover materials.

27. The blanket of Claim 26 wherein the plurality of fastener assemblies comprise:

a plurality of standoffs mounted on the structure and collocated with the plurality of grommets; and

a plurality of members matable with the plurality of grommets and threadable into the plurality of standoffs to secure the acoustic blanket to the standoffs so as to define the pre-determined air gap between the acoustic blanket and the structure.

28. A method for constructing an acoustic blanket, the method comprising:

providing first and second cover materials comprising Teflon impregnated fiberglass;

providing a Polyimide foam panel of a pre-determined dimension; and

heat-sealing a perimeter of the first and second cover materials with the Polyimide foam panel disposed within a cavity defined by the heat-sealed first and second cover material.

29. The method of Claim 28 wherein the step of heat-sealing comprises:

disposing a plurality of grommets within the perimeter of the first and second cover materials.

30. The method of Claim 28 comprising:

providing at least one vent; and

heat-sealing the at least one vent into one of the first and second cover material.

31. The method of Claim 28 comprising:

providing a plurality of Polyimide foam panels; and

heat-sealing the perimeter of the first and second cover materials with the plurality of the Polyimide panels disposed within the cavity.

32. The method of Claim 31 comprising:

providing at least one barrier ply layer; and

heat-sealing a perimeter of the at least barrier ply layer into the perimeter of the first and second cover materials.

33. A method of mounting an acoustic blanket to a structure, the method comprising:

connecting a plurality of standoffs to the structure so that individual ones of the plurality of standoffs are collocated with an individual one of a plurality of apertures in the perimeter of the acoustic blanket;

passing an individual one of a plurality of fasteners through the individual apertures; and

connecting the individual fasteners to the individual standoffs to secure the acoustic blanket to the plurality of standoffs